Documentation on the EFNEP Foods Database and Food Groupings
Joda P. Derrickson, MS, RD

I. History

After a review of the literature, the EFNEP Evaluation/Reporting Committee felt that it was better to continue to use 24-hour food recalls as our method of dietary evaluation than to use food frequency assessments. The committee also sought to make the reporting system as flexible as possible. Thus, the EFNEP Evaluation/Reporting System (ERS) was designed to accommodate three dietary reporting options:

1. Computerized nutrient analysis (food groups calculated by computer)
2. Hand tallied food group analysis
3. External nutrient analysis and food group analysis.

Only the food group dietary assessment is required; all other methods are optional.

ERS and the foods database supporting nutritional method #1 (Computerized Nutrient Analysis) were designed to be consistent with the Food Guide Pyramid and the Dietary Guidelines for Americans. The foods database and subsequent reports based on nutritional method #1 included nutrients which are commonly found to be eaten in inadequate amounts by low income women. Each food in the foods database was entered in the serving size portion which would minimize conversions and putting in fractions of a serving (i.e. one ounce portion of meat, one fluid ounce of beverages, 1 tablespoon of dressings, 1 cup of soups and cooked vegetables, etc.).

The committee reviewed the Cornell EFNEP reporting system, foods dictionary and foods database, and used them as a model for developing the ERS. A majority of the nutrient composition information came from the Human Nutrition Information Service's databanks. Additional information was included for ethnic foods, recipes, and other foods not in HNIS databanks, but from other reliable sources (USDA's handbook 8 series or Pennington and Church's Composition of Foods or manufacturer's data). Each food was then evaluated for food group equivalents using the guidelines outlined below. The database was then reviewed for accuracy by two other EFNEP reporting committee members (Dr. Ruby Cox, Ph.D., and Dr. Jean Ann Anliker, Ph.D.). After this review, the database was piloted by EFNEP staff in Florida and Hawaii. Additional corrections were made as needed.

II. The EFNEP Food Guidance System

In order to apply the vague guidelines of the Food Guide Pyramid to the more rigid ERS, certain standards had to be agreed upon. Standards were needed to ensure that computerized nutrient analysis of a food recall would yield a food group analysis consistent with the food guide pyramid, and to ensure that the computerized analysis would be consistent with a hand-tallied food group analysis. The original work completed by USDA in developing the Food Guide Pyramid servings and amounts (USDA, HNIS, Adm. Report #377, April 1985) was reviewed.

Mean nutrient values of food groups in this report and the guidelines in USDA's Food Guide Pyramid pamphlet (the black one, Home and Garden Bulletin #252) were the basis for defining servings of food groups. In March of 1992, all EFNEP contacts were asked to participate in developing a consensus EFNEP Food Guidance System. Forty-two State contacts participated.

Here's a summary of the "consensus recommendations" used to develop the food group scoring system in the ERS. If your State or county is doing hand-tallied food group analysis, or is updating the foods database, please use these guidelines.

1. Dried beans, legumes and meats will be included in the "Meat and Meat Alternate" food group.

2. EFNEP will recommend two, three-ounce servings of meat or alternates (2 x 3 oz = total of 6 ounces), and evaluate the servings of meats/alternates in this manner. The computerized system will divide the total number of ounces of meat by three to get the number of servings of meat/alternates.

3. Tofu processed with calcium and other calcium rich sources (i.e. fish with bones) will be added to the "Milk Products and Calcium Sources" food group. Dark green leafy vegetables will not be included.

4. Fruits and Vegetables: States have the option to either teach and evaluate fruits and vegetables as two separate groups, or to combine the servings into one food group, as long as the total servings recommended is five (or more) and serving sizes are the same as proposed in the Daily Food Guide. The computerized food database will have fruits and vegetables as separate food groups.

5. Standardization of Vitamin A and C: It was agreed that standardization was needed. Dietary evaluation of Vitamin A and Vitamin C rich foods is not required (it was never intended to be). However, the standardization amounts were lowered to at least 15 mg Vitamin C, and 100 RE (1000IU) Vitamin A to be consistent with HNIS recommendations of good sources of nutrients. Serving sizes will be simplified whenever possible.

6. To be consistent with the Daily Food Guide, starchy vegetables will not be added to the bread and cereal group.

7. a. For the purposes of dietary evaluation "other group" was changed to "Added fats and sugar". Dietary equivalents are based on ~35 calories/serving.

   b. Scoring will not be required for States doing hand tallying (it was never intended to be).

c. Scoring (in terms of the computerized food database) will evaluate fried foods and other foods which are combinations of food groups and the Added fat and sugar group.

d. The standardization of "Added fat and sugar" group would remain approximately 1 tsp. fat, and 2 tsp. sugar, with a maximum "ballpark" guideline of no more than a total of 10 servings per day (based on dietary guidelines: <30% kilocalories from fat, and <10% kilocalories from sugar, and average caloric intake of 1600-1800 calories).

Refer to the chart on the "EFNEP Food Guidance System" for more detailed information about food groups and serving sizes.

III. Food Group Scoring

When the above standards were difficult to apply, the following judgments were consistently made:

1. "Other" Food Group = ~35 calories of added or extra fat or sugar
   = 2 tsp. of added sugar = 2 x 4.25 grams of sugar
   = 1 tsp. of fat = 4.5 grams of fat

2. Meats and Alternates

It was decided by the committee that one serving of a meat should be at least 15 grams of protein. A "moderate fat" meat was assumed to have no more than 15 grams of fat per 3 oz. serving. If a serving of a meat contained more than 15 grams of fat per serving, the amount of excess fat was calculated to be in the "other" food group.

For example, a high fat sausage in a one-ounce portion contains five grams of protein and eight grams of fat. It was credited for .33 servings of meat and .67 servings of "others" (8-5 = 3 grams extra fat/4.5).

3. Dairy/Calcium Food Group

A standard of 300 mg of' calcium per serving of a dairy/calcium rich food was established. Mixed dishes with cheese or other dairy products were "credited" for a percentage of a serving of the dairy/calcium food group.

For example, one slice of a cream pie contains 120 mg. of calcium. It was credited for 120/300 or .4 serving from the dairy/calcium food group.

4. Breads and Cereals

Whenever possible, the portions designated in the Food Guide Pyramid were used. Servings from the "other" food group were estimated based on added fat, and added sugar as previously described.

5. Combination Foods

Food group scoring was based on:

- Knowledge of recipe and nutrient values per serving

- Added fat was estimated as described above.

Added sugar was estimated (when no sugar information was available) by subtracting the carbohydrates per serving of the food groups (using the equivalent in the diabetic exchange system) and then using 4.25 grams of carbohydrate per teaspoon of sugar to estimate the teaspoons of sugar. The number of servings of "other" was based on number of teaspoons of added sugar/2 (plus added fat).

6. Sweetened juice with a small amount of juice was credited with .1 serving of fruit and .3 serving of "other" added sugar per fluid ounce.

IV. Good Sources of Nutrients and Dietary Fiber

The last page of the Homemaker Diagnostic Report (if nutritional method #1 is chosen) contains information on which foods consumed were good sources of specific nutrients. USDA's method of listing a food as a good source of a nutrient, if it contains at least 10% of the RDA, was applied to determine good sources of nutrients in ERS. We used the RDA's for women 19-25 as our reference.

Nutrient	Recommendations	Minimum Amount for a "Good Source"
Protein	46g	4.6g
Iron	*~~15g~~ use 10mg	*~~1.5~~ 1.0mg
Calcium	1200mg	120mg
Vitamin A	800RE	80 RE
Vitamin C	60mg	6 mg
Vitamin B_6	1.6mg	.16mg
Dietary Fiber	20 grams (CA guidelines)	2.0 grams

It is important to note that USDA definitions of a good source may seem low for protein and Vitamin C, while particularly high for iron. You may need to explain the basis of determining "good sources" of nutrients to your paraprofessionals so that they can accurately discuss the "Homemaker Diagnostic Report" with homemakers.

*Values were changed to 10mg and 1.0mg for Recommendations and Minimum Amount, respectively in October 1997 to allow more products to show as good sources of iron on the diagnostic report.